

may be claimed through amendment of the present claims or through presentation of new claims in this or a related application. Such claims, whether broader, narrower, equal, or different in scope to the original claims, also are regarded as included within the subject matter of the present disclosure.

1. A system, comprising:
a longitudinally mounted engine adapted to drive rear wheels of a vehicle; and
two, independent, electric motors mounted to the engine, on opposite sides of the engine, and adapted to drive front wheels of the vehicle, where the two electric motors are not rotationally coupled to the engine.
2. The system of claim 1, wherein the two electric motors each include a housing having a cylindrical section, and wherein a width of the cylindrical section in a direction of a central axis of the cylindrical section and a latitudinal axis of the engine is less than a diameter of the cylindrical section.
3. The system of claim 1, wherein the two electric motors each include a plurality of arms extending in different outward directions from a housing of each electric motor, and wherein the plurality of arms mount the electric motors to the engine.
4. The system of claim 1, wherein the two electric motors include a first electric motor mounted to an oil pan of the engine at a first side of the engine and a second electric motor mounted to the oil pan at a second side of the engine, with the first side being opposite to the second side relative to a longitudinal axis of the engine.
5. The system of claim 4, wherein the oil pan is positioned along a longitudinal axis of the vehicle and a central vertical axis of the engine.
6. The system of claim 4, wherein the oil pan includes a first plurality of mounting bosses formed by a first exterior surface at the first side and a second plurality of mounting bosses formed by a second exterior surface at the second side.
7. The system of claim 6, wherein the first electric motor is coupled to the first plurality of mounting bosses and the second electric motor is coupled to the second plurality of mounting bosses.
8. The system of claim 1, wherein the two electric motors include a first electric motor and a second electric motor, wherein a first reduction gearbox is coupled to the first electric motor between an output of the first electric motor and a first front axle shaft, and wherein a second reduction gearbox is coupled to the second electric motor between an output of the second electric motor and a second front axle shaft.
9. The system of claim 8, wherein a length from a first end of the crankshaft to a second end of the crankshaft is positioned parallel to a longitudinal axis of the vehicle.
10. The system of claim 1, further comprising an integrated starter motor/generator mechanically coupled to a crankshaft of the engine and electrically coupled to the two electric motors.

11. The system of claim 1, further comprising a plurality of engine mounts coupling the engine to a frame of the vehicle, with each electric motor of the two electric motors coupled to a different engine mount of the plurality of engine mounts.

12. A system, comprising:

twin, independent, electric motors mounted to either side of an exterior of an oil pan of a longitudinally mounted engine in a rear wheel drive vehicle; and

twin reduction gearboxes, each reduction gearbox of the twin reduction gearboxes positioned between an output of one of the twin electric motors and one of two front axle shafts of front wheels of the rear wheel drive vehicle.

13. The system of claim 12, wherein the engine is mechanically coupled to rear wheels of the vehicle by a crankshaft of the engine, and wherein the engine is not mechanically coupled to front wheels of the vehicle by the crankshaft.

14. The system of claim 13, further comprising a transmission coupled to the crankshaft of the engine, the transmission positioned along a longitudinal axis of the vehicle at a rear end of the engine.

15. The system of claim 12, wherein the engine is a V-engine including two opposing cylinder banks, and wherein the electric motors are mounted to the exterior of the oil pan vertically below the cylinder banks relative to a surface on which the vehicle sits.

16. A vehicle, comprising:

an engine including an engine block and an oil pan mounted to the engine block;

two rear wheels driven by the engine;

two front wheels not rotationally coupled to the engine;

two, independent, electric motors, where each motor of the two electric motors drives a different one of the two front wheels and is coupled to an opposite, different side of each of the oil pan and the engine block; and
two reduction gearboxes, each reduction gearbox coupled between and to each of an output of one of the two electric motors and one of the two front wheels.

17. The vehicle of claim 16, wherein each electric motor of the two electric motors includes a first plurality of arms extending in an outward direction away from a central axis of a cylindrical section of a housing of each electric motor.

18. The vehicle of claim 17, wherein each arm of the first plurality of arms includes an axial extension coupling the housing of each electric motor to the oil pan.

19. The vehicle of claim 18, wherein each electric motor includes a second plurality of arms coupling the housing of each electric motor to engine mounts of the engine.

20. The vehicle of claim 19, wherein each arm of the first plurality of arms extends across a length of the oil pan in a direction of a longitudinal axis of the engine and a height of the oil pan in a vertical direction relative to a ground surface on which the vehicle sits, and wherein each arm of the second plurality of arms extends in the vertical direction and is coupled to an engine mount of the engine.

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